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Therapeutic Drug Monitoring of Anti-Retroviral Drugs

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Most current highly active antiretroviral therapy (HAART) regimens for HIV-positive patients contain two nucleoside reverse transcriptase inhibitors (NRTIs) with either a Protease inhibitor (PIs) or a non-nucleoside reverse transcriptase inhibitors (NNRTI). Notwithstanding the regulatory guidelines recommending therapeutic drug monitoring (TDM) for these drugs, therapeutic failure is a very serious concern implying drug induced toxicity and more importantly viral rebound and viral resistance.

Single dose, steady state and dose ranging studies have all more or less demonstrated that there is a positive correlation between plasma concentrations and therapeutic effects of anti-retrovirals (ARVs). However, one of the main challenges still seems to be the target concentrations for these drugs and their relevant inhibitory quotient. In this talk, we are going to examine these issues along with bioanalytical challenges, drug-effect and drug–toxicity relationships and finally drug-drug interactions within different HAART regimes.